

Title (en)  
A HANDHELD PERSONAL CARE DEVICE AND A METHOD OF ESTIMATING A POSITION AND/OR AN ORIENTATION OF A HANDHELD PERSONAL DEVICE RELATIVE TO A SUBJECT

Title (de)  
HANDHALTBARE KÖRPERPFLEGEVORRICHTUNG UND VERFAHREN ZUR BESTIMMUNG EINER POSITION UND/ODER EINER AUSRICHTUNG EINER HANDHALTBAREN PERSÖNLICHEN VORRICHTUNG IN BEZUG AUF EINE PERSON

Title (fr)  
DISPOSITIF PORTATIF DE SOINS PERSONNELS ET PROCÉDÉ D'ESTIMATION D'UNE POSITION ET/OU D'UNE ORIENTATION D'UN DISPOSITIF PORTATIF PERSONNEL PAR RAPPORT À UN SUJET

Publication  
**EP 3592513 A1 20200115 (EN)**

Application  
**EP 18709006 A 20180307**

Priority  
• EP 17160254 A 20170310  
• EP 2018055521 W 20180307

Abstract (en)  
[origin: EP3372357A1] There is provided a handheld personal care device, the device comprising one or more light emitting elements, each configured to emit light; one or more light receiving elements, each configured to receive light and output a respective measurement signal representing measurements of the received light; and a control unit that is configured to estimate a position and/or an orientation of the device relative to a subject; wherein the one or more light emitting elements and the one or more light receiving elements are arranged on the device such that, depending on the position and/or the orientation of the device relative to the subject, at least one of the one or more light receiving elements can receive light emitted by at least one of the one or more light emitting elements and reflected by a reflective surface in the environment of the subject; wherein the control unit is configured to estimate the position and/or the orientation of the device relative to the subject based on an analysis of the respective measurement signals of the one or more light receiving elements to determine, for each of the one or more light receiving elements, (i) whether the light receiving element has received light from at least one of the one or more light emitting element, and/or (ii) from which of the one or more light emitting elements the light receiving element has received light.

IPC 8 full level  
**B26B 19/38** (2006.01); **B26B 21/40** (2006.01)

CPC (source: EP RU US)  
**A46B 15/0004** (2013.01 - US); **A46B 15/0036** (2013.01 - US); **B26B 19/38** (2013.01 - RU); **B26B 19/388** (2013.01 - EP); **B26B 21/4056** (2013.01 - EP); **G01S 7/4808** (2013.01 - US); **G01S 7/4815** (2013.01 - US); **G01S 7/4816** (2013.01 - US); **G01S 17/42** (2013.01 - US); **A46B 2200/1066** (2013.01 - US); **B26B 19/388** (2013.01 - US); **B26B 21/4056** (2013.01 - US)

Citation (search report)  
See references of WO 2018162512A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**EP 3372357 A1 20180912**; CN 110382182 A 20191025; CN 110382182 B 20210810; EP 3592513 A1 20200115; EP 3592513 B1 20201118; JP 2020512064 A 20200423; JP 7181213 B2 20221130; RU 2743752 C1 20210225; US 2020033448 A1 20200130; WO 2018162512 A1 20180913

DOCDB simple family (application)  
**EP 17160254 A 20170310**; CN 201880016415 A 20180307; EP 18709006 A 20180307; EP 2018055521 W 20180307; JP 2019548394 A 20180307; RU 2019132096 A 20180307; US 201816491192 A 20180307